HEARING CONSERVATION STAND-DOWN

Good Hearing is a Necessity

Survivability and Lethality:

- **50-60% of Situational Awareness comes from Hearing…**

  % increases in limited visual fields

Sound can be heard:

- **In the Darkness, Inclement Weather, or the Haze of Weapon Fire,**
- **360 Degrees (You can't see someone running up behind you, but with good hearing you can survive)**
- **24 hours a day – 7 days a week**

Consequences

Hearing Injuries are among the top four in theaters of operation

- 7/10 Injuries Due to Blasts – 50% Experience Permanent Loss

Permanent hearing loss is invisible (no blood), painless

- By the time you know you've been injured, it's too late…
- Combat effectiveness is already compromised

Increased Safety Mishaps from loss of hearing (misinterpreting)

- What are the consequences of not hearing correctly???
  - Attack vs. Get back
  - Watch um' vs. Pop um'
  - Go vs. No

Impact of Hearing Loss on Combat Effectiveness	Good Hearing	Poor Hearing
Time to Identify Target	40 sec	90 sec
Incorrect Command Heard by Gunner	1%	37%
Correct Target Identification	98%	68%
Enemy Targets Killed	94%	41%
Wrong Target Shot	0%	8%
Tank Crew Killed by Enemy	7%	28%

Ref: Tank Gunner Performance and Hearing Impairment
(Garinther & Peters, Army RD&A Bulletin 1990, Jan-Feb 1-5)

WOUNDED IN ACTION INJURY LOCATIONS

189 TOTAL WOUNDS

(MILITARY MEDICINE, VOL 170, JUNE 2006)

Lost Opportunities with Permanent Hearing Loss

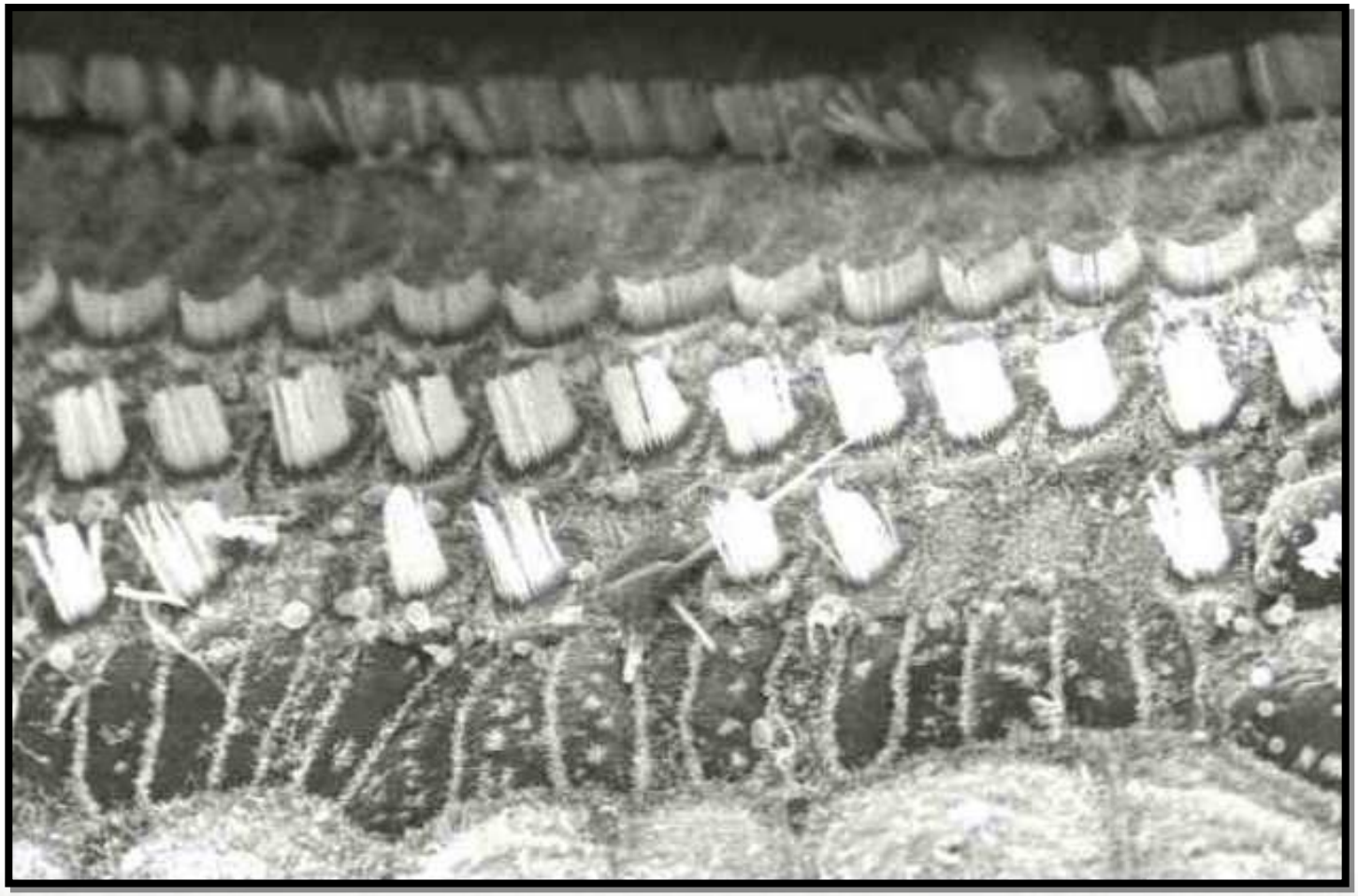
Social:

- Family & Friends

Professional:

- Career Advancement
- Meeting physical requirements
  - Firefighters, Homeland Security
  - Spec Ops, Pilot, Navigator, CDL License

COCHLEAR HAIR CELLS



Know your numbers (level to hear)

-10 Super hearing
-5
0 Avg
5 Normal
10 Range
15
20
25

	LEFT						RIGHT					
	500	1000	2000	3000	4000	6000	500	1000	2000	3000	4000	6000
DATE OF AUDIOGRAM Y Y M M D D	5	10	15	30	60	45	5	10	20	25	40	25

30 Mild Hearing Loss
40
50 Moderate Hearing Loss
60
70 Severe Hearing Loss
80
90 Profound Hearing loss

above 25 is HEARING LOSS

Larger the Number

Greater the Hearing Loss

What determines noise damage?
How loud and How long

- 60 dB: Normal Conversation
- 85 dB: Damaging Level
- 95 dB: Lawn Mower/Weed Eater
- 130 dB: Shotguns/NASCAR
- 150 dB: Jet Engines
- 170 dB: Rifles & 50’’ Caliber Weapons
- 180 dB+ Explosions/IED’s

Noise Exposure Limits when Criterion Level = 85 dB(A)	
3 dB(A) Exchange Rate Allowable Level dB(A)	Maximum Permitted Daily Duration (hours)
85	8
88	4
91	2
94	1
97	0.5
100	0.25

NOISE AT WORK

- Generators (95dB)
- Screaming DI (100dB)
- M-16 (130-150dB)
- 50 Caliber (170 dB)
- Explosions/IED’s (180 dB+)

NOISE AT HOME

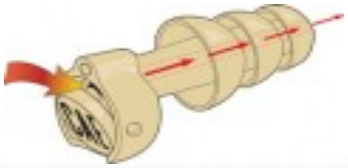
- Power tools……94 dB
- Lawn care……94 dB
- Chain saw……110 dB
- Engine repair….100 dB
- Shop work……104 dB

NOISE AT PLAY

- Auto racing (130-150dB)
- Jet skiing, Motorcycles (95dB)
- Hunting / Shooting (130-170dB)
- Rock concerts (110-130dB)
- Loud music: cars, MP3, IPOD

Hearing Protection Devices

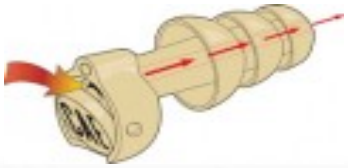
- *Like your rifle, these weapons will not help you without minimal **training** & understanding of how they work!



Better Combat Solutions?

Korea 1951

Fallujah 2007



Notice Their
Choice of HPD

Yes, that is a gun in his ear.
RULE No. 5
Always wear hearing protection

HPDs and Communication Ability

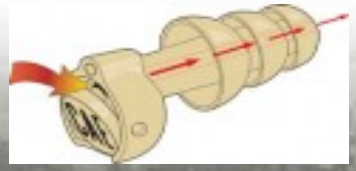
Wear HPD when exposed to hazardous noises

Noise Situations: Communication Not Critical

Basic Foamies, Quad Flange, Ear Mu

Noise Situations: Communication Critical

Combat Arms Earplugs, TCAPS

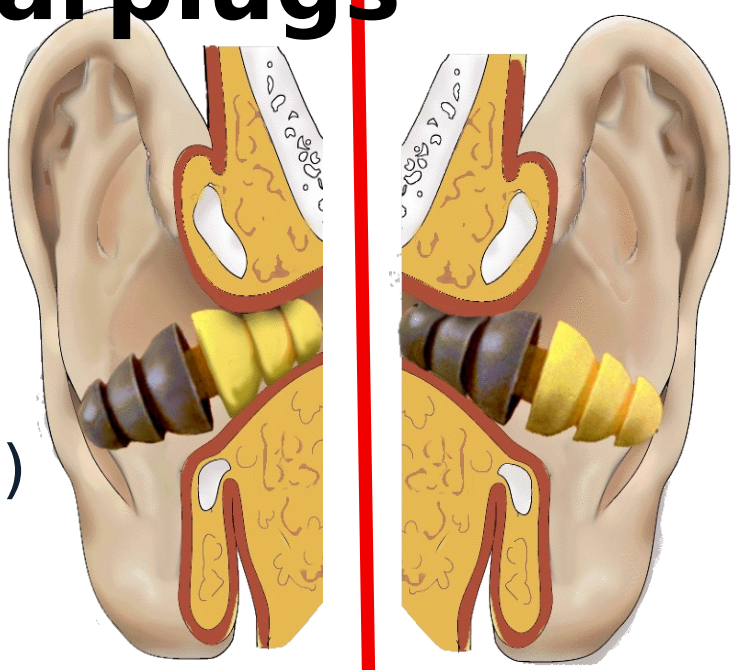


Combat Earplugs

Impulse noise
- Gun shot

Hear more

Olive out:
(harder to see)

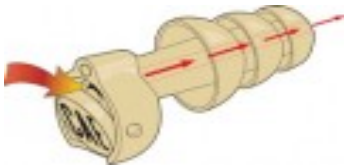


Steady noise
- Generator noise

Blocks more

Yellow out:
(easy to see)

Open:
(hear more)



Closed:
(blocks more)

How to correctly wear hearing protection.

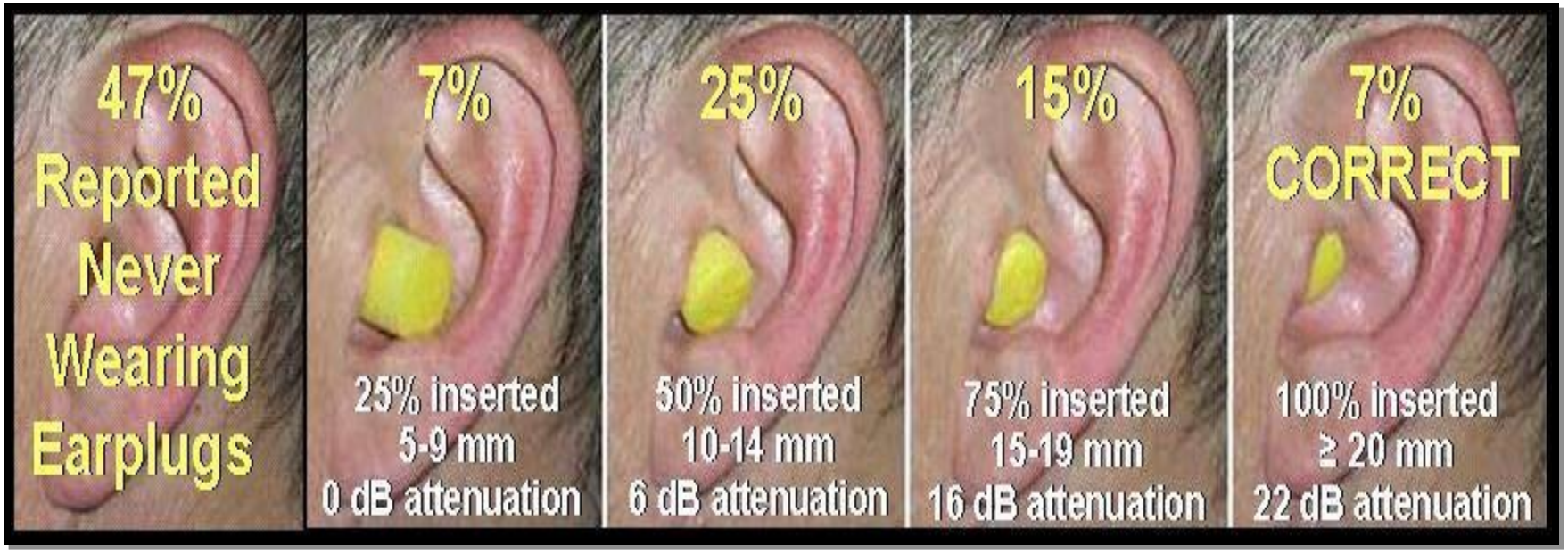
Right

Wrong

Foamies:

- Roll or squish the earplug
- Pull back on ear w/opposite hand
  - Straightens ear canal for DEEPER insertion
- Insert the earplug
- Should not be able to see your buddy's
- Foamie if looking directly at him or yourself if looking directly in a mirror

Real-World Hearing Protection



NAVAIR 14MAR06

Many reasons why HPDs are not worn:

Afraid of not hearing, not comfortable, problems inserting, not seen as important, hearing is not that bad, inconvenient, extra hassle, not available

Many solutions:

Different types, sizes and filters: discuss options

In noise on the job and at home

Wear CONSISTENTLY and CORRECTLY!

Noise induced hearing loss is:

PERMANENT and PROGRESSIVE

Ears need auditory rest too